# **Appendix A**

Summary of Data Collection and Report Methodology

# Appendix A

# Summary of Data Collection Operations and Report Methodology

The 2000 data for the Natural Gas Annual are taken primarily from Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition" and Form EIA-895, "Monthly Quantity and Value of Natural Gas Report." Each of these surveys and all other sources of data for this report are discussed separately in the following sections.

# Form EIA-176

## Survey Design

The original version of Form EIA-176 was approved in 1980 with a mandatory response requirement. Prior to 1980, published data were based on voluntary responses to Bureau of Mines, U.S. Department of the Interior predecessor Forms BOM-6-1340-A and BOM-6-1341-A of the same title.

In 1982, the scope of the revised EIA-176 survey was expanded to collect the number of electric utility consumers in each State, volumes of gas transported to industrial and electric utility consumers, detailed information on volumes transported across State borders by the respondent for others and for the responding company, and detailed information on other disposition. These changes were incorporated to provide more complete survey information with a minimal change in respondent burden. The 1982 revision of the Form EIA-176 continues to be the basis for the current version of this form.

In 1988, the Form EIA-176 was revised to include data collection for deliveries of natural gas to commercial consumers for the account of others. The revised form was approved for use during report years 1987 through 1989. A short version of Form EIA-176 was also approved in 1988. Companies engaged in purchase and delivery activities but not in transportation and storage activities may file the short form. Usually, these companies were municipals handling small volumes of gas.

In 1990, the Form EIA-176 was revised to include more

detailed information for gas withdrawn from storage facilities, gas added to storage facilities, deliveries of company-owned natural gas and natural gas transported for the account of others. The revised form was approved for use beginning with report year 1990.

Upon the Office of Management and Budget's (OMB) approval in 1993, the Form EIA-176 was revised. All deliveries to consumers were categorized as firm or interruptible. Commercial and industrial consumers are further categorized as nonutility power producers or as without nonutility power production.

Approval of the Form EIA-176 for use through 1999 was received in 1996 from OMB. The form was modified as outlined in the "Change in Definition of Consumption Sector" below.

After being approved by the OMB in 1999, the Form EIA-176 was revised to: (1) change the filing date from April 1 following the end of the report year to March 1 following the end of the report year, (2) remove the requirement to distinguish between firm and interruptible deliveries to consumers; and (3) remove the requirement to distinguish between gas volumes delivered to commercial and industrial consumers having nonutility generation of electricity from those not generating electricity.

Data reported on this form are not considered proprietary. Response to the form continues to be mandatory.

In January 2001, forms for report year 2000 were mailed to all identified interstate natural gas pipeline companies; intrastate natural gas pipeline companies; investor and municipally owned natural gas distributors; underground natural gas storage operators; synthetic natural gas plant operators; field, well, or processing plant operators that deliver natural gas directly to consumers (including their own industrial facilities) other than for lease or plant use or processing; and field, well, or processing-plant operators that transport gas to, across, or from a State border through field or gathering facilities. Detailed instructions for completing the form were included in each survey package.

Completed forms were returned to the Natural Gas Division, Office of Oil & Gas, where each was checked for errors, corrected as necessary, and processed into computer-generated State and national data summaries.

## Change in Definition of Consumption Sector

With the 1996 annual reporting cycle, the Energy Information Administration changed the customer category used for reporting deliveries to consumers in the agricultural industry from commercial to industrial. Most natural gas consumed in agriculture is used to drive irrigation systems and to dry crops. Separate reports of the volumes affected are not available so the direct impact of this change is not known.

In comparing sectoral use over time, note that:

- there is an inherent shift in natural gas volumes from the commercial to industrial sectors due simply to changes in the reporting requirements. This break in series may indicate a spurious increase in industrial consumption with a corresponding decrease in the commercial sector;
- the sum of natural gas volumes consumed by the commercial and industrial sectors will not be changed by this modification in the instructions.

### Response Statistics

Each company and its parent company or subsidiaries were required to file if they met the survey specifications. The original mailing totaled 1,831 questionnaire packages. To this original mailing, 37 names were added and 35 were deleted as a result of the survey processing. Additions were the result of comparisons of the mailing list to other survey mailing lists. Deletions resulted from post office returns and determinations that companies were out of business, sold, or not within the scope of the survey. After all updates, the survey universe was 1,788 responses from approximately 1,700 companies.

Following the original mailing, second request mailing, and nonrespondents follow-up, 1,793 responses were entered into the data base. There were 40 nonrespondents.

# Summary of Form EIA-176 Data Reporting Requirements

The Form EIA-176 is a five-page form consisting of seven parts. Part I of the form contains identifying information including the company identification number, the company name and address, the State for which the report is filed, and address correction information. Part II contains certification

information. The body of the form (Parts III-VII) is a multiline schedule for reporting all supplies of natural gas and supplemental gaseous fuels and their disposition within the State indicated. Respondents filed completed forms with the EIA in Washington, D.C. Data for the year 2000 were due March 1, 2001.

Computer edit programs verified the report year, State code, and arithmetic totals. Further tests were made to ensure that all necessary data elements were present and that the data were reasonable and internally consistent. The computerized edit system produced error listings with messages for each failed edit test. To resolve problems, respondents were contacted by telephone and were required to file amended forms with corrected data.

All natural gas and supplemental gaseous fuels volumes were reported on a physical custody basis in thousand cubic feet, and dollar values were reported to the nearest whole dollar. All volumes were reported at 14.73 pounds per square inch absolute pressure and 60 degrees Fahrenheit. Other minor report standards were specified in the instructions booklet to assure that the filed data were consistent and could be readily processed.

# Comparison of the Form EIA-176 with Other Data Sources

Comparison of the EIA-176 data with data from similar series is another method of ensuring the validity of the data published in this report. This comparison on a company-by-company basis showed significant differences that respondents were required to reconcile.

The FPC-14, "Annual Report for Importers and Exporters of Natural Gas," was discontinued in September 1995. Data on imports and exports of natural gas, as collected by the EIA-176 survey, were checked by comparing individual responses with quarterly data reports, *Natural Gas Imports and Exports*, filed with the Office of Fossil Energy, U.S. Department of Energy. These quarterly reports are required as a condition of import/export authorizations. Where discrepancies were noted, respondents were required to file corrected reports.

Similarly, data on the underground storage of natural gas were compared with submissions of Form EIA-191, "Monthly Underground Gas Storage Report." If significant differences were noted, companies were contacted to reconcile the discrepancies. During 2000, the 117 companies filing the Form EIA-191 reported total injections of 2,680 billion cubic feet and total withdrawals of 3,482 billion cubic feet. This compares to 2,684 billion cubic feet of injections and 3,498 billion cubic feet of withdrawals, as reported on the Form EIA-176.

Data on deliveries to residential, commercial, and industrial consumers were compared with data submitted on Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers." Where discrepancies were noted, respondents were required to file corrected reports for either and sometimes both surveys. Numerous telephone calls were made to clarify any misunderstandings concerning the correct filing of both forms. Typical errors included electric utility volumes combined with industrial volumes, sale for resale volumes reported as industrial consumption, cogeneration volumes not reported on Form EIA-857, and misinterpretation of general instructions.

A discussion of the comparison of the data on deliveries to electric utilities filed on Form EIA-176 and that reported in the EIA publication, *Electric Power Annual*, is included in this Appendix under "Electric Utility Data."

### Routine Form EIA-176 Edit Checks

A series of manual and computerized edit checks were used to screen the Form EIA-176. The edits performed included validity, arithmetic, and analytical checks. A computerized check was also made for consistency with previous filings.

The incoming forms for the survey were reviewed prior to keying. This prescan determined if the respondent identification (ID) number and the company name and address were correct, if the data on the form appeared complete and reasonable, and if the certifying information was complete.

Manual checks on the data were also made. Each form was prescanned to determine that data were reported on the correct lines. The flow of gas through interstate pipelines was checked at the company level to assure that each delivery from a State was matched with a corresponding receipt in an adjoining State.

### Form EIA-895

# Survey Design

In 1996, the Reserves and Natural Gas Division redesigned the Form EIA-895, formerly known as the "Monthly Quantity of Natural Gas Report." The Form EIA-895, "Monthly Quantity and Value of Natural Gas Report," has a Monthly and Annual Schedule (replaces the Form EIA-627) for quantity and value of natural gas production. The Annual Schedule is to be filed with the December Monthly Schedule each year and should include any changes or updates in previously reported monthly data.

# Response Statistics

Of the 32 natural gas producing States, 30 participated in the voluntary EIA-895 survey by filing the completed form or by responding to telephone contacts. Data for the 2 nonresponding States (Pennsylvania and Illinois) were estimated. Data on the quantities of nonhydrocarbon gases removed in 2000 were reported by the appropriate agencies of 11 of the 32 producing States. These 11 States accounted for 46 percent of total 2000 gross withdrawals. The State of Missouri reported zero gross withdrawls.

The commercial recovery of methane from coalbeds contribute a significant amount to the production totals in a number of States. Coalbed methane seams production quantities (in million cubic feet) are included in gross withdrawals totals for the following States: Alabama (112,393), Colorado (413,290), New Mexico (583,587) and Wyoming (151,449).

## Summary of EIA-895 Data Reporting Requirements

The Form EIA-895 is a two-page form divided into five parts. Part I requests identifying information including the name and location of the responding State agency and the name and telephone number of a contact person within the agency. Part II collects monthly data on the production of natural gas including gross withdrawals from both gas and oil wells; volumes returned to formation for repressuring, pressure maintenance, and cycling; quantities vented and flared; quantities of nonhydrocarbon gases removed; quantities of fuel used on lease; and marketed production. Part III of the form is for reporting the monthly volume and value of marketed production. Part IV of the form is for reporting the annual data, including the number of producing gas wells, the production of natural gas including gross withdrawals from both gas and oil wells; volumes returned to formation for repressuring, pressure maintenance, and cycling; quantities vented and flared; quantities of nonhydrocarbon gases removed; quantities of fuel used on lease; marketed production; value of marketed production; and quantity of marketed production (value based). Part V is space to be used by the respondent to explain data elements reported that may be based on definitions differing from those applied to data in previous years.

# Routine Form EIA-895 Edit Check

Each filing of the Form EIA-895 is manually checksed for reasonableness and mathematical accuracy. Volumes are converted, as necessary, to a standard 14.73 psia pressure base. Value data are compared to the previous year's data for reasonableness. When data on nonhydrocarbon gases



# U.S. DEPARTMENT OF ENERGY ENERGY INFORMATION ADMINISTRATION

Washington, D.C. 20585

Form Approved OMB No. 19050175 Expiration Date: 12/31/02 (Revised 1999)

# ANNUAL REPORT OF NATURAL AND SUPPLEMENTAL GAS SUPPLY AND DISPOSITION FORM EIA-176

	REPORT YE	EAR					
This report is mandatory under the Federal Ener and sanctions statements, see Sections VII and		4 (Public L	aw	93-275).	For th	e provisions concerning the co	onfidentiality of information
PART I: IDENTIFICATION							
Complete and return by March 1, 2000 to:		Affi	x m	ailing lal	el or	enter mailing address	
Energy Information Administration: EI-45 Mail Station: 2G-024 FORSTL U.S. Department of Energy Washington, D.C. 20585 Attn: Form EIA-176 OR Fax to: (202) 586-1076 (ATTN: EIA-176) Questions? Call (202) 586-6303	Control (ID) No.  Name:						
1.0 Control No. 2.0 Company Nam	e: :	3.0 Report	Sta	ite		EIA	4.0 Revised Report Indicator
a. Name and address on mailing lab b. Change name, attention line, and/ c. Company was sold to, or merged d. Company went out of business. Company went out	for mail address as indicated I with, company entered below Customer accounts taken over mments:	<i>I</i> .	any	entered t	elow.		
e. Attention:							
PART II: CONTACT INFORMATION (person in 1.0 Contact (Please Print)	most knowledgeable about	t the repo	rted		<b>)</b> Title		
3.0 Phone Number: ( ) -	<b>4.0</b> Fax Number: ( )	-		5.	E-Ma	ail Address:	
6.0 Signature				7.	) Date		

Title 18 USC 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious, or fraudulent statements as to any matter within its jurisdiction.

1.0 Control No.	2.0 Company Na	ame:					3.0 Report Sta	ite	Е	IΑ	4.0 Revised	Report
											Indicator	
PART III: TYPE OF COMPANY AND	GAS ACTIVITIE	S OPER	ATE	D IN THE	REPOR	RT STAT	Έ					
1.0 Type of company (check one)		<b>2.0</b> Gas	Acti	vities Ope	erated O	nsystem	Within the Rep	ort State	(check	all that	apply)	
a. Investor owned distributor		a.		Produce	d Natura	al Gas	n	n.	Delive	ered for	Resale	
b Municipally owned distribu	tor	b.		Gathered	d		n		Delive	ered dir	ectly to consun	ners
c. Interstate pipeline		C.		Processe	ed		O		Other	(specif	fy)	
d. Intrastate pipeline		d.		Purchase	ed							
e. Storage operator		e.		Transpoi	rted Inte	rstate (be	etween two or n	nore state	es)			
f. SNG plant operator		f.				•	nly within one s	tate)				
g. Integrated oil and gas		g.		Stored U	-	und						
h. Producer		h.	Щ	Stored L								
i. Gatherer		i.		Injected		e-air						
j. Processor		j. k.		Produce								
k. Other (specify)		k. I	H	Imported Exported								
			Ш									
PART IV: SUPPLY OF NATURAL A	ND SUPPLEMEN	ITAL GA	S RE	CEIVED	WITHIN	OR TRA	ANSPORTED I	NTO REI	PORT S	STATE		
Iter	n Description					١,	/olume	Estima Footno	ate/ ote*		Cost	Estimate/ Footnote* (*see below)
						(Mcf a	<b>/olume</b> t 14.73 psia)	Footno (*see be	elow)	(inclu	Cost iding taxes)	(*see below)
1.0 Company-owned natural gas prod	uced onsystem											
2.0 Onsystem purchases received:												
2.1 From producers, gatherers, a	nd/or gas processo	rs										
2.2 From pipelines and/or distribu	tion companies											
2.3 From synthetic natural gas pla	•											
2.4 At State line or U.S. border from												
	JIII.											
Company												
State or Country												
(Continue on Part VI, if mo	re space is needed	I)										
3.0 Transportation and/or exchange re	eceipts:											
3.1 Received within the report Sta	ate											
3.2 Received at the State line or U	J.S. border from:											
Company												
State or Country												
· —		1)										
(Continue on Part VI, if mo		1)										
<b>4.0</b> Transported into the report State f	rom:											
State or Country												
(Continue on Part VI, if mo	re space is needed	I)										
5.0 Withdrawn from storage facilities:												
5.1 Withdrawn from company-ope	erated underground	storage:										
5.1.1 Company-owned natura	al gas											
5.1.2 Natural gas owned by o												
5.2 Company-owned natural gas												
	•		-									
storage operators												
5.3 Received from underground s	torage operators for	or the acc	ount	of others								
5.4 From liquefied natural gas sto	rage											
6.0 Synthetic natural gas produced												
7.0 Other sources of supply (specify s	ource and/or											
kind of fuel):												
(Continue on Part VI, if mo	re space is needed	1)										
8.0 Total supply within report State												
Total supply within report State												

 $<sup>^{\</sup>star}$  Enter **E** if data reported is an estimate; enter **F** if a footnote explaining the data is included in PART VII.

1.0 Control No.	2.0 Company Name:		3.0 Report Stat	te El	A 4.0 Revised	Report
					Indicator	
PART V: DISP	OSITION OF NATURAL AND SUPPLEMENTAL GAS	RECEIVED WIT	HIN OR TRANSPORT	ED OUT OF RE	PORT STATE	
	Item Description		Volume (Mcf at 14.73 psia)	Estimate/ Footnote* (*see below)	Cost (including taxes)	Estimate/ Footnote* (*see below)
1.0 Used in we	I, lease, and field operations					
2.0 Returned to	oil and/or gas reservoirs					ĺ
3.0 Used, remo	ved, or lost in gas processing or treating plants					į
<b>3.1</b> Compa	ny-operated plants::			}		
3.1.1	Volume delivered to company-			ļ		!
	operated plants for redelivery	Mcf		1		ļ
3.1.2	Volume used for plant fuel					ļ
3.1.3	Extraction loss estimated gas phase volume of liquids e	extracted				
3.1.4	Volume of nonhydrocarbons removed (e.g., H <sub>2</sub> S & CO <sup>2</sup>	·)				l
3.1.5	Vented, flared, and/or lost					i
3.2 Plants	operated by others:					ļ
3.2.1	Volume delivered to plants					
	operated by others for redelivery	Mcf				
3.2.2	Total volume used, removed, vented and/or flared					1
4.0 Added to s	, ,					l
	d into company-operated underground storage:			-		l
4.1.1	Company-owned natural gas					
4.1.2	Natural gas owned by others					1
	any owned gas delivered directly to underground storage					1
	red to underground storage operators for the account of c	•				!
	to liquefied natural gas storage					ļ
	of company-owned natural gas:					ļ
	red to other pipelines within the report State					
	red to resellers (e.g., distribution companies)					
	red at the State line or U.S. border to:					
	pany					
	e or Country					
•	tinue on Part VI, if more space is needed)	.f.C		ļ		į
5.4 Deliver	· · · · · · · · · · · · · · · · · · ·	of Consumers				
5.4.	Resideritial Sales					
5.4.2	Commercial Sales					
5.4.2	Confinercial Sales			ļ		
5.4.3	Industrial Sales					
5.4.0	Illuustilai Sales					
5.4.4	Other Nonutility Power Producer Sales					
]	Sales residently i offer i reduced edited					
5.4.5	Electric Utility Sales					
]						
5.4.6	Natural Gas Used as Vehicle Fuel					
]						
1						
6.0 Average he	at content of gas delivered directly to consumers	Btu		!		

Page 3

 $<sup>^{\</sup>star}$  Enter **E** if data reported is an estimate; enter **F** if a footnote explaining data is included in PART VII.

1.0 Control No.	2.0 Company Name:		3.0 Report Sta	ate E	IA 4.0 Revised	Report
					Indicator	· 🔲
PART V: DISPOS	SITION OF NATURAL AND SUPPLEMEN	TAL GAS RECEIVED WI	THIN OR TRANSPORT	ED OUT OF R	EPORT STATE (cont	inuation)
	Item Description		Volume (Mcf at 14.73 psia)	Estimate/ Footnote* (*see below)	Cost (including taxes)	Estimate/ Footnote* (*see below)
7.0 Natural gas tr	ransported for the account of others					
7.1 Delivered	to other pipelines within the report State $$ .					
7.2 Delivered	to resellers for the account of others					
7.3 Delivered	at the State line or U.S. border to:					
Compa	any					
State o	or Country					
(Contin	nue on Part VI, if more space is needed)					
7.4 Transport	ted and delivered to consumers for the acco	ount of others:				
	ı	Number of Consumers		! !		
7.4.1	Residential Consumers					
7.4.2	Commercial Consumers					
7.4.3	Industrial Consumers					
7.4.4	Other Nonutility Power Producer Consumers					
7.4.5	Electric Utility Consumers					
7.4.6	Natural Gas Used as Vehicle Fuel					
	exchange gas or storage gas					
	d at point(s) within the report State					
Compa				 		
State o	or Country					
,	nue on Part VI, if more space is needed)					
	ine, storage and/or distribution operations					
10.0 Other dispos	Sition (specify)					
(Contin	nue on Part VI, if more space is needed)					
11.0 Total disposi	ition accounted for					
12.0 Unaccounted	d for gas supply (+) or disposition (-)					

<sup>\*</sup> Enter **E** if data reported is an estimate; enter **F** if a footnote explaining data is included in PART VII.

PART VI. CONTINUATION SHEET	1.0 Control No.	2.0 Company Name:		3.0 Report Sta	ate E	ΞIA	4.0 Revised	Report
Supply (Continued)  PART IV, 2.4: On-system purchases received at State line or U.S. border from: (Continued) Company State or Country Company State or Country Company State or Country State or Country State or Country State or Country Company State or Country							Indicator	
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Company State or Country Company State or Country								
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State or Country	State or Country			i				
	Company		•					
PART V, 10.0: Other disposition (specify): (Continued)	State or Country			1				
	PART V, 10.0: Other disposition (s	specify): (Continued)						

Page 5

<sup>\*</sup> Enter **E** if data reported is an estimate; enter **F** if a footnote explaining the data is included in PART VII.

<b>1.0</b> Con	trol No.	2.0 Company	Name:	3.	0 Report State	EIA	4.0 Revised Rep	port
					•		Indicator	
PART V	/II: FOOTNO	TES						
Part No.	Item No.	Sub-item (State, Company, or Line)	Line No.		Footnote			
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Each filing of the Form EIA-895 is manually checked for reasonableness and mathematical accuracy. Volumes are converted, as necessary, to a standard 14.73 psia pressure base. Value data are compared to the previous year's data for reasonableness. When data on nonhydrocarbon gases removed, gas vented and flared, and gas used for repressuring are not reported for a State that historically reported one or more of these items, a volume is imputed. The imputation is based on the average ratio of gas volumes in the missing category to total gross withdrawals in States with values reporting gas in that category. This average ratio is applied to the volume of total gross withdrawals reported by the State to calculate the volume for the missing items. State agencies are contacted by telephone in order to correct errors. Amended filings or resubmissions are not a requirement, since participation in the survey is voluntary.

# Comparison of the Form EIA-895 with Other Data Sources

Annual production data, as reported on the Form EIA-895, are compared to the sum of monthly data previously reported on the Monthly Schedule. The comparison is made in order to assure the reasonableness of the data reported on the Form EIA-895, Annual Schedule. Any significant differences are resolved by contacting the reporting State.

For discussion of the comparison of production data collected on Form EIA-895 and that collected on Form EIA-23, "Annual Survey of Domestic Oil and Gas Reserves," see the EIA report, U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, Annual Reports.

# **Electric Utility Data**

The electric utility data published in this report are taken from the Forms EIA-759, "Monthly Power Plant Report" and FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." These data were used in order to maintain consistency among EIA publications. Electric data are necessary on the Form EIA-176 to provide a supply/disposition balance on the form. Differences in the two surveys are apparent in the results published in Table 16, "Natural Gas Deliveries to Consumers by State," and Table 19, "Natural Gas Delivered to Electric Utilities for the Account of Others by State," where volumes in Table 19 sometimes exceed volumes in Table 16. A State-by-State comparison of the reported volumes of natural gas, as collected on the Forms EIA-176 and EIA-759 is shown in Table A1. The national totals differ by 401 billion cubic feet or 15 percent in relative terms.

While processing the data reported on the Form EIA-176, the EIA made special efforts to determine the reasons for the differences in reporting of electric utility data on the Forms EIA-176 and EIA-759. Typical instances of misreporting occurred in the reporting of gas delivered to electric utilities for the account of others. Some companies reported these deliveries under sales for resale. Others reported them under transportation, exchange and/or storage deliveries. A few others reported them under transported to industrials. Companies making mistakes were asked to refile, and new companies were asked to file when they were found making deliveries of gas. Most companies were cooperative, and their refilings and new filings improved the accuracy of the data.

# Other Data Sources

The U.S. Minerals Management Service (USMMS) supplied data on the quantity and value of natural gas production and the number of producing wells in the Gulf of Mexico Outer Continental Shelf. Volumes of extraction losses were reported on Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production." Heat (Btu) content extraction loss was estimated from data reported on Form EIA-64A and Form EIA-816, "Monthly Natural Gas Liquids Report." Volumes and prices of natural gas imports and exports were reported to the Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports.* These data are nonproprietary and are filed annually by each individual or organization having authorization to import and export natural gas.

# **Report Methodology**

### **Marketed Production**

Marketed production of natural gas is taken from responses to Part IV of the Form EIA-895. It is the quantity of natural gas produced that is available for marketing and is reported in Tables 3 and 6. It refers to quantities of gas available after processes related to production are complete. These processes are repressuring, pressure maintenance, cycling, venting and flaring, removing nonhydrocarbon gases, using fuel on the lease.

Average wellhead prices are calculated from volumes and values reported in Part IV of the Form EIA-895. These data are shown as "Reported Wellhead Value" in Table 6. The volumes in this section refer to the actual amounts of natural gas reported to the States as sold.



### U.S. DEPARTMENT OF ENERGY Energy Information Administration Washington, D.C. 20585

Form Approval OMB No. 19050192 Expiration Date: 12/31/02 (Revised 1999)

# MONTHLY QUANTITY AND VALUE OF NATURAL GAS REPORT FORM EIA-895

This report is voluntary under Public Law 93-275. For the	e provisions concerning the	confidentiality of in	information and sanctions, see Sections VI and VII of the instructions.
PART I. IDENTIFICATION DATA			
1. Name of State Reporting			2. Report Period: Month Year 2 0
3. Name of Office/Agency			Complete and return forms to:  Energy Information Administration, EI-45 Mail Station: 2G-024 FORSTL Washington, D. C. 20585
4. Office Address (Street, City, State, Zip Code	)		Attn: EIA-895  OR Fax to: (202) 586-1076  Questions? Call (202) 586-6119
PART II. NATURAL GAS VOLUMES (Report All	Volumes in Thousands	of Cubic Feet	t)
Enter the pressure base at which all volumes a	are reported (psia at 60	degrees Fahrei	enheit)
Item			Volume (Thousand cubic feet)
Gross Withdrawals (excluding lease condensa	te)		
Gas and Condensate Wells			
Oil Wells (Casinghead)			
TOTAL			
Used for Repressuring			
Vented and Flared			
Nonhydrocarbon Gases Removed			
Natural Gas Used as Fuel on Leases			
Marketed Production (Excluding Lease Fuel)			
PART III. QUANTITY AND VOLUME OF MARKE	TED PRODUCTION		
Volume (thousand cubic fe	et)		Value (thousand dollars)
PART III. CONTACT INFORMATION (person mo	ost knowledgeable abou	ut the reported	( data)
5. Contact Name:		6. Title:	
7. Phone Number: ( ) -	8. Fax Number: (	) -	9. E-Mail Address:
10. Signature:		<u>-</u>	11. Date:

Title 18 USC 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious, or fraudulent statements as to any matter within its jurisdiction.

Energy Information Administration

**U.S. DEPARTMENT OF ENERGY** Energy Information Administration Washington, D.C. 20585

Form Approved OMB No. 19050192 Expiration Date: 12/31/02 (Revised 1999)

# wasnington, D.C. 20363 MONTHLY QUANTITY AND VALUE OF NATURAL GAS REPORT

**FORM EIA-895** 

PART IV: ANNUAL SCHEDULE (to be completed when a calendar year of monthly reports has been completed)

Enter the total number of producing gas wells in operation as of December 31 for the reporting year

Enter the	Enter the pressure base at which all volumes are reported (psia at $60^\circ$ degrees Fahrenheit)	which all volume	s are reported	1 (psia at $60^\circ$ deg	yrees Fahreni	heit)				
Month	Gas and Condensate Wells	Oil Wells (Casinghead)	Total	Used for Repressuring Etc.	Vented and Flared	Non- hydrocarbon Gases Removed	Natural Gas Used as Fuel on Leases	Marketed Production	Value of Marketed Production	Quantity of Marketed Production (Value Based)
January										
February										
March										
April										
May										
June										
July										
August										
September										
October										
November										
December										
Total										
PART V:	PART V: COMMENTS									

In many States, the marketed production volumes are larger than the reported wellhead value volumes. Differences in these volumes generally result from differences in definition and reporting requirements for separate data systems in the State. For example, while production quantities of federal, tribal, and State royalty gas are included in marketed production, some State reporting rules exclude these quantities from reported wellhead value volumes.

### Natural Gas Processed and Extraction Loss

Extraction loss is the reduction in the volume of natural gas available for disposition resulting from the removal of natural gas liquid constituents at natural gas processing plants. It represents that portion of the "raw" gas stream that is transferred from the natural gas supply chain to the petroleum and natural gas liquids supply chain. Extraction loss does not include the reduction in volume resulting from the removal of nonhydrocarbon constituents or gas used as fuel, vented, flared, or otherwise disposed of within natural gas processing plants. Extraction loss also results in a reduction in the total heat (Btu) content of the natural gas stream equal to the heat content of the liquids extracted.

The Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production," collects data on the volume of natural gas received for processing, the total quantity of natural gas liquids produced, and the resulting shrinkage (defined as extraction loss in this report) from all natural gas processing- and cycling-plant operators. The quantity of natural gas received and liquids produced are reported by State of origin of the natural gas. Shrinkage volumes are calculated and reported by plant operators based upon the chemical composition of the liquids extracted using standard conversion factors specified in the form instructions. A description of the Form EIA-64A survey is presented in the EIA publication, U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, Annual Reports.

The heat (Btu) content of liquids extracted is not reported on the Form EIA-64A. Therefore, in order to estimate the extraction loss heat content, data reported on the Form EIA-816, "Monthly Natural Gas Liquids Report," were used to determine the individual products contained in the total liquids reported on Form EIA-64A. A description of the Form EIA-816 survey is presented in the EIA publication, Petroleum Supply Annual 2000, Volume II.

To estimate the quantities of individual products extracted in each State, data from the Form EIA-64A survey were used to determine the total liquids production, and data from the Form EIA-816 survey were used to estimate the quantities of the individual products contained in those total liquids.

The Form EIA-816 captures information on the quantity of individual components (i.e., ethane, propane, normal butane, isobutane, and pentanes plus) produced or contained in mixes of plant liquids as determined by chemical analysis. The volumetric ratios of the individual components to the total liquids, as calculated from the 12 monthly Form EIA-816 reports for each State, were applied to the annual total liquids production, as reported on the Form EIA-64A, to estimate the quantities of individual components removed at gas-processing plants.

The heat (Btu) content of extracted liquids was estimated by applying conversion factors to the estimated quantities of products extracted in each State. These conversion factors, in million Btu per barrel of liquid produced, were ethane, 3.082; propane, 3.836; normal butane, 4.326; isobutane, 3.974; and pentane plus, 4.620. It should be noted that, at the State level, extraction losses are not necessarily related to State production. All gas processed in 9 States originated, or was produced in those States; but part of the gas processed in the other 15 states originated outside of the State in which the gas was processed. Gas produced from 9 States (Arizona, Indiana, Maryland, Missouri, New York, Oregon, South Dakota, Tennessee and Virginia) was not processed.

### Lease and Plant Fuel

Lease and plant fuel represent those quantities of natural gas used in well, field, and/or lease operations (such as gas used in drilling operations, heaters, dehydrators, and field compressors) and as fuel in natural gas processing plants.

Lease fuel data were collected for report year 2000, on the Form EIA-895, "Monthly Quantity and Value of Natural Gas Report." Of the 32 States reporting on the Form EIA-895, 19 States reported quantities of natural gas used as lease fuel. In the absence of reporting quantities on the Form EIA-895, the Form EIA-176 was used to estimate lease fuel quantities. Although EIA recognizes that lease data collected on the Form EIA-176 do not constitute a census or result from a statistically selected sample, the data collected in the survey provide the best information available to the EIA for estimating such usage. To estimate lease use during 2000 (Table 15), several simplifying assumptions were made:

- The quantity of gas used for lease fuel was assumed to be a function of gross withdrawals of natural gas from gas and oil wells.
- The average proportion of company-owned onsystem production reported as used in lease operations by respondents to the Form EIA-176 was assumed to be typical of the average use by all operators as a proportion of gross withdrawals.

 Average usage was calculated separately for Alaska and for the lower 48 States to reflect the distinctive field operations in Alaska, particularly on the North Slope.

Form EIA-176 respondents reported volumes of company-owned onsystem production amounting to 7 percent of 2000 gross withdrawals (35 percent of gross withdrawals in Alaska and 3 percent of withdrawals in the lower 48 States). Lease use reported by respondents averaged 0.03238 per thousand cubic feet of reported production in Alaska and thousand cubic feet 0.02544 per of reported production in the lower 48 States, excluding Utah. The fuel use estimates shown in Table 15 were calculated by applying the above ratios to the gross withdrawals from various States (Table 3) not reporting lease use on the EIA-895.

### Natural Gas Consumed as a Vehicle Fuel

Data on deliveries of natural gas delivered for use as a vehicle fuel were collected for the first time in 1990. In 1990 and 1991 deliveries of natural gas for vehicle fuel use were included with volumes delivered to commercial consumers. Beginning with the *Natural Gas Annual 1992*, vehicle fuel volumes are no longer included with commercial volumes.

# Coverage of Consumer Prices

Coverage for prices varies by consumer sector as discussed below. All average prices are computed by dividing the reported revenue by its associated sales volume. Prices for deliveries of natural gas to consumers, except electric utilities, are calculated from reports to Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition." City gate prices are calculated from reports to the Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers." Both of these forms are completed by companies that deliver natural gas to end-use consumers.

With the unbundling of services in the natural gas industry, pipeline and local distribution companies provide transporta tion service for their end-user customers. In this report, those volumes are described as deliveries of gas for the account of others. When companies that deliver gas are the sellers of thatgas, they are able to report the associated revenue to the Energy Information Administration. Those volumes are described as onsystem sales. When the firm that physically delivers gas to the end user acts as a transportation agent, it does not know the sales price of the gas. Respondents, therefore, do not report a revenue amount associated with deliveries for the account of others in their submissions of the Form EIA-176.

**City gate:** City gate prices represent the total cost paid by gas distribution companies for gas received at the point where the

gas is physically transferred from a pipeline company or transmission system. This price is intended to reflect all charges for the acquisition, storage, and transportation of gas as well as other charges associated with the LDC's obtaining the gas for sale to consumers.

Prices for gas delivered to the city gate represent all of the volumes of gas delivered. Since these prices are reported on a monthly form, the annual average city gate price is calculated by summing the monthly revenues reported and dividing that figure by the sum of the monthly reported volumes.

**Residential:** Prices in this publication for the residential sector cover nearly all of the volumes of gas delivered.

Commercial and Industrial: Prices for the commercial and industrial sectors are often associated with relatively small volumes of the total gas delivered. This occurs because they are reported by those that deliver gas and not by either the gas resellers or by the consumers. Beginning with the reporting of 1996 data, the EIA has changed the customer classification used for reporting deliveries to consumers in the agricultural industry from commercial to industrial. This change affects the calculation of prices because these volumes and revenues previously classified as commercial are now classified as industrial. Separate reports of the volumes and revenues affected are not available so the direct impact of this change is not known.

Facilities that generate electricity but are not regulated are known as nonutility power producers. A nonutility power producer may be a commercial facility, an industrial facility, or a facility that produces electricity for resale. Deliveries of natural gas to nonutility power producers are reported on the Form EIA-176. The volumes and associated revenues for deliveries to nonutility producers who are primarily commercial establishments are included in the calculation of commercial prices. Those for deliveries to both nonutility producers who are primarily industrial establishments and nonutility establishments that produce electricity for resale are included in the calculation of industrial prices.

**Electric Utilities:** Prices for natural gas are also reported to the EIA on the Form FERC-423, "Monthly Report of Cost and Quality of Fuels for Electric Plants," a consumer survey form. Electric utility prices in this report are taken from this form. The respondents are all large regulated electric utilities that report consumption and prices of fuels and represent most of the volumes delivered to electric utilities. These prices are also published in the EIA report, *Cost and Quality of Fuels for Electric Utility Plants.* Prices to electric utilities, because they are derived from a survey of the utilities themselves, represent most of the volumes consumed by this sector.

**Vehicle Fuel:** Most of the natural gas delivered for vehicle fuel represents deliveries to refueling stations that are used primarily or exclusively by fleet vehicles. Thus, the prices are often those associated with the operation of fleet vehicles and may be based on internal transfer prices for companies primarily in the natural gas business.

## Natural Gas Balancing Item

The natural gas balancing item represents the difference between the sum of the components of natural gas supply and the sum of the components of natural gas disposition. It is calculated for each State as the result of a comparison between total reported supply and total reported disposition (Table 2). In the formula used, total reported supply is the sum of marketed production, net interstate movements, net movements across U.S. borders, and supplemental gaseous fuels supply. Total reported disposition is the sum of extraction loss, net storage changes (net additions to storage), and consumption. When this calculation results in a negative quantity for the balancing item it represents an excess of reported supply in relation to reported disposition, and positive quantities indicate the opposite situation.

The differences between supply and demand represent quantities lost, the net result of gas company conversions of flow data metered at varying temperature and pressure conditions to a standard temperature and pressure base, metering inaccuracies, the effect of variations in company accounting and billing practices, differences between billing cycle and calendar-period time frames, and imbalances resulting from EIA's merger of data reporting systems, which vary in scope, format, definitions, and type of respondents. The balancing items in individual States may also reflect the underreporting on Form EIA-176 of gas transported across State borders for the account of others by some interstate. pipelines.

### **Census Divisions**

The Bureau of the Census, U.S. Department of Commerce, has grouped the 50 States and the District of Columbia into Census divisions. Some of the tables and graphs in this report show data by Census division. These groupings are:

**New England:** Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

Middle Atlantic: New Jersey, New York, and Pennsylvania.

East North Central: Illinois, Indiana, Michigan, Ohio, and Wisconsin

West North Central: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota.

**South Atlantic:** Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia.

**East South Central:** Alabama, Kentucky, Mississippi, and Tennessee.

West South Central: Arkansas, Louisiana, Oklahoma, and Texas.

**Mountain:** Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming.

Pacific Contiguous: California, Oregon, and Washington.

Pacific Noncontiguous: Alaska and Hawaii

Table A1. Comparison of Electric Utility Natural Gas Consumption Data by State, 2000 (Million Cubic Feet)

State	Form EIA-176	Form EIA-759	Difference	MDP <sup>a</sup>
Alabara	20.050		045	4.7
Alabama	36,959	36,344	-615	1.7
Alaska	33,096	35,570	2,474	7.5
Arizona	92,536	92,019	-517	0.6
Arkansas	45,226	34,603	-10,624	30.7
California	110,536	129,449	18,913	17.1
Colorado	25,577	32,148	6,571	25.7
Delaware	5,257	4,337	-921	21.2
Florida	335.230	316.486	-18.744	5.9
Georgia	16,827	21,447	4,620	27.5
Illinois	8,964	2,764	-6,200	224.3
Indiana	7,563	7,754	191	2.5
lowa	4,062	4,735	673	16.6
Kansas	27,205	33,509	6,304	23.2
Kentucky	688	4,073	3,384	491.7
Louisiana	278,491	292,002	13,512	4.9
Maryland	21,576	20,665	-911	4.4
Massachusetts	6.089	3.190	-2.899	90.9
Michigan	34,671	43,548	8,877	25.6
Minnesota	3,463	5,411	1,948	56.2
Mississippi	89,817	89,110	-707	0.8
Missouri	23.913	30.480	6.568	27.5
	188	192	3	1.7
Montana				
Nebraska	1,745	5,508	3,762	215.6
Nevada	61,342	80,037	18,695	30.5
New Hampshire	483	783	300	62.1
New Jersey	32,848	16,952	-15,896	93.8
New Mexico	30,429	38,080	7,650	25.1
New York	74,243	95,812	21,568	29.1
North Carolina	9.650	9,579	-71	0.7
Ohio	6,657	6,791	134	2.0
Oklahoma	139,027	169,031	30.004	_
Oregon	38,496	41,500	3,003	7.8
	4.268	2.955	-1,313	44.4
Pennsylvania				
South Carolina	2,833	2,814	-19	0.7
South Dakota	88	3,607	3,519	_
Tennessee	4,694	1,829	-2,866	156.7
Texas	899,187	1,245,008	345,822	38.5
Utah	11,569	10,544	-1,025	9.7
Vermont	1,102	1,023	-79	7.7
Virginia	61,348	15,923	-45,425	285.3
Washington	41,918	41,173	-746	1.8
West Virginia	156	425	269	172.2
Wisconsin	12,505	12,043	-463	3.8
Wyoming	0	1,843	1,843	0

a Relative comparisons are expressed as the maximum difference percentage (MDP), or the absolute value of the difference between two volumes divided by the smaller of the two volumes, multiplied by 100.
 — = Not applicable.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Energy Information Administration (EIA), Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition" and Form EIA-759, "Monthly Power Plant Report."

Table A2. Natural Gas Unaccounted for by State, 1996-2000 (Million Cubic Feet)

State	1996	1997	1998	1999	2000
Alahama	2.054	45 700	22.700	2.024	16.070
Alabama	-2,954	15,799	32,788	3,021	16,070
Alaska	1,032	-1,790	3,923	-1,993	-3,905
Arizona	1,191	2,975	-40,211	23,178	4,114
Arkansas	7,639	7,569	3,985	4,301	4,206
California	277,924	292,339	61,625	-9,344	-11,015
Colorado	6,652	9,110	11,664	15,001	24,278
Connecticut	1,055	334	2,187	1,948	21
D.C	784	1,074	794	1,398	695
Delaware	438	5,935	4,808	-1,254	1,864
Florida	-4	4,391	3,105	8,645	1,509
Georgia	1,666	-1,260	9,828	-49,244	2,421
Hawaii	88	6	61	17	-73
daho	-18.969	-61.021	-19.015	-11.107	-15.955
Illinois	10,867	15,349	14,312	8,777	12,200
Indiana	-3,307	11,848	10,081	6,268	8,881
lowa	4 F00	5 270	21 570	17 100	6,247
lowa	4,500	5,370	34,578	17,180	
Kansas	7,904	25,939	22,666	11,636	1,680
Kentucky	9,410	8,345	409	R2,045	9,248
Louisiana	19,555	40,760	82,184	<sup>R</sup> -14,397	11,680
Maine	241	231	78	570	250
Maryland	5.592	12.147	6.588	9.570	8.163
Massachusetts	-5,692	1,359	4,702	11,798	-2,304
Michigan	16.836	42.875	2.685	32.940	7.299
Minnesota	6,703	4,855	825	3,643	5,000
Mississippi	13,047	18,066	-122,470	18,000	7,065
Missouri	1,596	5,779	7,267	9,669	25,306
Montana	-6,233	-6,635	2,146	-1,613	255
Nebraska	4,354	1,531	1,630	-281	5,434
Nevada	1,479	2,795	623	-1.947	-5,980
New Hampshire	466	1,046	149	540	282
Now Jarany	-741	3,500	-16,615	-22.294	3.176
New Jersey				, -	-, -
New Mexico	6,859	2,010	-2,065	-13,432	-606
New York	940	126,641	115,611	42,660	88,282
North Carolina	1,300	8,125	-274	27,932	4,534
North Dakota	1,259	1,041	7,590	-137	748
Ohio	16.344	-67,821	6.586	32.614	17.529
Oklahoma	302	-32,983	29,312	-14,856	33,473
Oregon	1.560	1.603	3,116	390	2.022
Pennsylvania	-4,426	12,631	6,187	-7,268	14,473
Rhode Island	-4,420 -646	-2,652	-3,400	-2,901	-878
		•	,	,	
South Carolina	846	2,807	138	1,049	32,837
South Dakota	994	500	1,227	-339	1,511
Tennessee	11,613	8,426	1,630	R6,936	10,703
Texas	51,729	10,262	-73,153	40,909	21,783
Utah	15,207	35,469	3,895	7,090	5,348
Vermont	1.817	4,690	777	-915	-518
Virginia	4,810	7,057	5,521	7,789	9,678
	68.447	59,159	1,772	-1,662	3,940
Washington					
West Virginia	5,044	64,475	11,554	6,709	8,641
Wisconsin	-2,756	7,001	7,791	4,770	298
Wyoming	3,911	5,349	7,961	R5,495	4,375

R = Revised data.
Source: Energy Information Administration (EIA), Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition."